

# 2016-2017 SMALL GAME HUNTING PROSPECTS



**Missouri Department of Conservation**

# TABLE OF CONTENTS

Introduction.....	1
Dove.....	2
Rabbit.....	4
Quail.....	6
Frog.....	8
Ring-necked Pheasant.....	10
Squirrel.....	12
Rails and Snipe.....	14
American Woodcock.....	16
Raccoon.....	18
Crow.....	20
Predators.....	22
Bowfishing.....	24
Quail Emphasis Area Manager's Notes.....	26
Small Game Grab Bag.....	30

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# INTRODUCTION

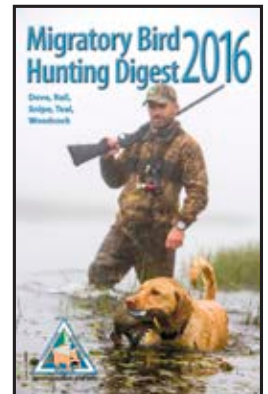
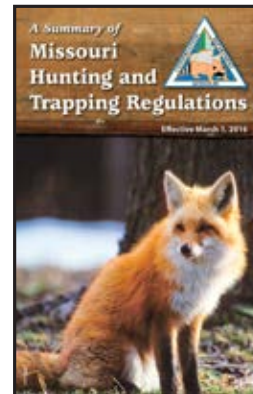
## *Welcome to the 2016-17 Small Game Hunting Prospects!*

Thanks for your interest in small game hunting! Missouri Department of Conservation staff develop this document to help small game hunters across Missouri learn more about the game they pursue, factors that affect the presence and abundance of game, and where to hunt various wildlife. Small Game Hunting Prospects blends the results of population trend surveys with introductory information on small game species, their management, and hunting tips.

Small Game Hunting Prospects is updated annually and covers a variety of small game species and highlights Department conservation areas statewide where various species are found. To find huntable conservation areas not featured in Small Game Hunting Prospects, you can search the Conservation Department's Places to Go webpage at [short.mdc.mo.gov/Z4V](http://short.mdc.mo.gov/Z4V).

Sections include profiles of popular small game species, Manager's Notes for a sample of Quail Emphasis Areas across the state, and the Small Game Grab Bag with tips and tricks for small game hunters. Species profiles include information on life history, habitat management, ongoing research, and a list of featured hunting spots for 2016-17. Manager's Notes highlight management on a sample of conservation areas and provide hunting prospects for small game on that area.

Our intent is that new and seasoned hunters alike will use this resource to learn more about the game they hunt and try out a new hunting spot. For season dates, limits, permit information, and a list of areas with nontoxic shot requirements, please see the 2016 Missouri Hunting and Trapping Regulations booklet or the 2016 Migratory Bird Hunting Digest.



*Whether you are a new or veteran hunter, good luck!*

*And remember—safe hunting is no accident!*



## DOVE

MOURNING  
WHITE-WINGED  
EURASIAN COLLARED-DOVE

## ABOUT DOVES

Missouri is home to three species of dove that are legal to harvest during the state's dove hunting season. Mourning doves are the most common species found statewide, but hunters may also encounter white-winged doves or Eurasian collared-doves. White-winged doves are common to southwest states and Mexico, and Eurasian collared-doves have arrived in Missouri fairly recently and are increasingly common, especially near urban areas and grain-handling facilities.

## HUNTING AND MANAGEMENT

Doves can be found throughout the state and are often abundant, using both wild and planted food sources. They are fun to hunt and their aerial acrobatics test a shooter's skill. Because doves are sensitive to hunting pressure, many dove-hunting fields are managed with no-hunting periods throughout the season so birds have the opportunity to feed without being bothered, which keeps them in the area longer.

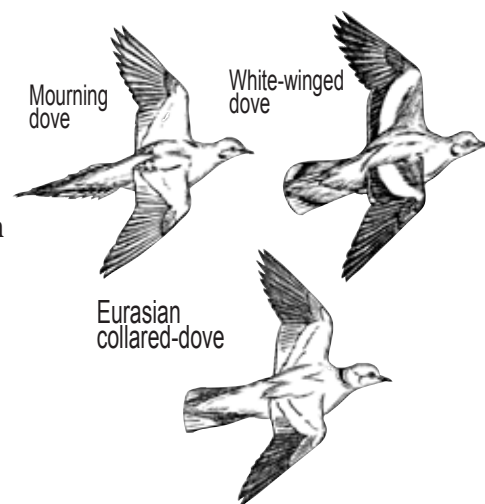
All you need to hunt doves is a shotgun and plenty of shells (#7 ½ or #8 shot). Many hunters also pack along a piece of camo material for building a makeshift blind and a bucket or shooting stool to sit on. Camo clothing is also recommended to help hunters remain undetected, and dove hunters should consider eye and ear protection as well. Once you've gathered your gear and found a promising field, the next step is to decide where in the field to hunt. Scout the field a day or two before the season opens and observe how the doves enter and use the field. If possible, set up along a flight path in a spot that offers concealment but still allows you to see incoming birds. Also, because doves regularly perch in dead limbs before entering the field to feed, look for tall dead trees or limbs near the feeding field. Decoys, including motion wing decoys, may coax birds in closer.

Mourning doves are referred to as habitat generalists because they use many different habitat types across their range. The Department, however, plants fields of seed-producing grains and sunflowers for forage and maintains low vegetation height and some bare ground to provide conditions favored by doves on many conservation areas.

While dove season lasts several weeks, most dove hunters only pursue them for a few days in the early season. Hunters looking for a different dove hunting experience should consider hunts later in the season. While hunting pressure the first week often pushes doves off of feeding fields, a lack of disturbance later in the season may encourage field use by later migrants. Late-season dove hunters often report having the area to themselves, and can experience good hunting when conditions are favorable.



Mourning dove



# EURASIAN COLLARED-DOVES

If you think you may have recently seen or heard a dove that didn't look or sound quite right, chances are you've encountered a Eurasian collared-dove. This species was introduced to the Bahamas from Europe and Asia in the 1970s. By the 1980s, it had made its way to Florida, and from there it has spread rapidly throughout much of the United States.

Eurasian collared-doves weigh 5-6 ounces, or about 15% more than their native mourning dove relatives. In addition to a stockier build, Eurasian collared-doves also have a squared tail tip rather than the pointed tail of a mourning dove. Their coloration is similar, though collared doves tend to have a lighter gray color than mourning doves. In addition, Eurasian collared-doves have a black crescent on the nape of their necks (hence the "collar" in their name), and broad white patches on the tail.

Like mourning doves, Eurasian collared-doves are agile fliers. Collared-doves are seed eaters and may visit the same feeding areas as other dove species, giving you an opportunity to compare the two species. Eurasian collared-doves are considered legal game in Missouri, and may be included as part of a combined daily harvest along with mourning doves and white-winged doves.



Eurasian collared-dove

## 2016-17 FEATURED HUNTING SPOTS

Many conservation areas are actively managed for doves. Managed dove hunting fields are planted in sunflowers, wheat, millet, buckwheat, corn, or a combination of these. Each field provides a different type of hunting experience. Weather conditions in the spring and early summer of 2016 made it difficult for planting and managing dove fields. Hunters are cautioned that field conditions may be fair or poor in some areas this fall.

To locate dove fields, contact the Regional Office in the area that you'd like to hunt. Dove hunting maps are also available on the Department's Places to Go webpage at [short.mdc.mo.gov/Z4V](http://short.mdc.mo.gov/Z4V).

**Atlanta CA** (Macon Co.)

**Bois D'Arc CA** (Greene Co.)

**Deer Ridge CA** (Lewis Co.)

**Eagle Bluffs CA** (Boone Co.)

**Henry Sever Lake CA** (Knox Co.)

**Indian Hills CA** (Scotland Co.)

**Locust Creek CA** (Sullivan Co.)

**Maintz Wildlife Preserve** (Cape Girardeau Co.)

**Marais Temps Clair CA** (St. Charles Co.)

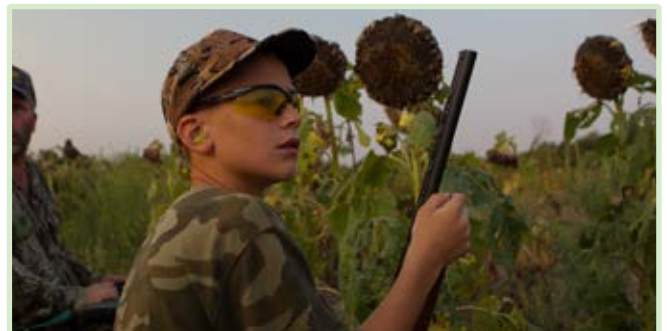
**Platte Falls CA** (Platte Co.)

**Pony Express Lake CA** (DeKalb Co.)

**IF YOU HARVEST A BANDED DOVE**  
Please report it!

**1-800-327-BAND**  
[www.reportband.gov](http://www.reportband.gov)

We just want the band number -  
you keep the band!



# RABBIT EASTERN COTTONTAIL SWAMP

Eastern cottontail

## ABOUT RABBITS

Of the two rabbit species that may be hunted in Missouri, the eastern cottontail is the most common. Cottontails are well distributed throughout Missouri, and they provide fun, challenging hunting opportunities to novice and experienced hunters alike. Rabbits are prolific breeders, and numbers fluctuate from year to year and place to place. Overall, rabbit numbers have been declining since the mid-1950s due to loss of habitat. However, cottontails can be found in all 114 of Missouri's counties. They prefer brushy cover, dense weedy areas, and thickets. Rabbits feed almost entirely on plants. Preferred foods include grasses, wheat, and white clover. During heavy snow cover, they eat buds, twigs, bark, and sprouts to survive.

Swamp rabbits are a little larger than cottontails with shorter, rounder ears, and the tops of the hind feet are reddish-brown. Swamp rabbits are localized to lowlands along stream banks and drainages of the Mississippi River in southeast Missouri. Hunters can recognize their presence in an area by their unusual habit of leaving droppings on logs and stumps. Swamp rabbits are good swimmers and can escape predators by diving into water and paddling away. Their numbers have declined due to loss of lowland hardwood forests and swamps.



Swamp rabbit

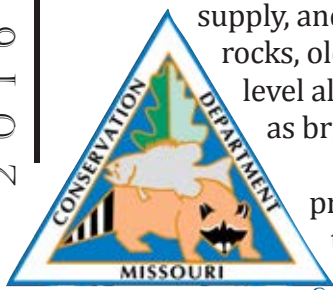
## HUNTING AND MANAGEMENT

One reason for rabbit hunting's popularity is its simplicity. No decoys, game calls, camouflage clothing, or high-tech gadgets are needed to provide a sporting pursuit and a tasty meal. Some people use dogs (often beagles), while others merely walk the fields and meadows — either way, it's fairly fundamental. Rabbits have a small home range and are reluctant to leave it. After flushing from cover, a rabbit will run away, but eventually circle around back to where it was initially found.

Some rabbit hunters won't take to the field until the first good snow, but rabbit numbers are typically higher when the season starts in October than during the cold weeks of January and early February. Fall is the season when rabbit populations and protective cover are both at their highest levels. As habitat availability is reduced by winter weather and crop harvests, rabbit populations shrink.

Good cottontail habitat includes well-distributed protective cover, a good year-round food supply, and a safe place for nesting. Brush piles can be created by loosely piling brush over rocks, old culvert pipes, or other unused equipment. Keeping the brush open at the ground level allows for freedom of movement. Place piles in close proximity to other cover such as briars, fencerows, or ungrazed pastures.

Landowners in southeast Missouri can improve habitat for swamp rabbits by protecting bottomland hardwood forests from clearing and replanting areas to native tree species. Swamp rabbits also need upland refuge to escape flooding. Brush piles and dense vegetation improve their habitat just like cottontails.





# HUNTING AND RABBIT POPULATIONS

Though it may seem surprising, heavy hunting pressure does not greatly affect rabbit populations. Rabbits, like most small game, have high annual mortality (about 80% per year) whether they are hunted or not. If rabbits are not hunted, their populations are usually affected by other factors like parasites, disease, or other predators.

Rabbits are prolific breeders, producing 3-4 litters of 3-8 young each year! If one pair of cottontails experienced no mortality, they could produce up to 350,000 rabbits in just 5 years! Rabbits become sexually mature at two to three months of age, so populations can quickly increase with good habitat conditions.

## 2016-17 FEATURED HUNTING SPOTS

Cottontails are abundant on many conservation areas. Below is a list of selected areas that have good cottontail populations. For more detailed information about an area, visit the Department's Places to Go webpage at [short.mdc.mo.gov/Z4V](http://short.mdc.mo.gov/Z4V).

### Cottontails

**Atlanta CA** (Macon Co.)

**Blind Pony Lake CA** (Saline Co.)

**Deer Ridge CA** (Lewis Co.)

**Henry Sever Lake CA** (Knox Co.)

**Holly Ridge CA** (Stoddard Co.)

**Hunnewell Lake CA** (Shelby Co.)

**Indian Hills CA** (Scotland Co.)

**Manito Lake CA** (Moniteau Co.)

**Moniteau Creek CA** (Howard Co.)

**Pony Express Lake CA** (DeKalb Co.)

**Robert E. Talbot CA** (Lawrence Co.)

**Schell-Osage CA** (St. Clair, Vernon Counties)

**Thomas Hill Reservoir** (Macon, Randolph Counties)

**Truman Reservoir Management Lands -Cross Timbers** (Hickory Co.)

**Wayne Helton Memorial Wildlife Area** (Harrison Co.)

### DID YOU KNOW?

While young rabbits are still in the nest, the female only visits briefly to nurse them, and covers the nest to hide them when she leaves. This often concerns people in the spring, as they think the young have been abandoned.



# BOBWHITE QUAIL

## ABOUT QUAIL

Known simply as “quail” or “bobwhite,” the northern bobwhite can be found in every county in Missouri. Bobwhites are so named for the male’s cheery call issued from fenceposts or other elevated perches in late spring and through summer. Bobwhites are ground-nesting birds and lay clutches of a dozen or so eggs in a nest at the base of a grass clump. Chicks hatch fully feathered and mobile and immediately begin hunting insect prey, which they depend on for rapid growth.

By mid-autumn, bobwhites assemble into coveys of 10 to 15 birds and generally eat seeds. Annual mortality is high, and most bobwhite young live less than a year. The quail’s high reproductive capacity counter balances this high mortality rate, and bobwhites are capable of rapid population increase when habitat conditions are favorable.



Northern bobwhite quail

## HUNTING AND MANAGEMENT

Few experiences afield match the heart-stopping thrill of a covey of quail exploding into flight. During hunting season, quail can be found in grassy or shrubby areas, especially near food sources. Bobwhites eat row crops such as corn and beans, but also readily consume wild seeds of ragweeds, sunflowers, and crotons. Areas with these cultivated and wild seed foods are good places to find quail, especially when brushy cover such as a plum thicket or brush pile is located nearby. A light-weight, fast swinging shotgun works well. Most hunters use #7½ or #8 shot and an open choke.

Savvy hunters know that in order to be successful at putting quail in the bag it’s important to pick out and focus on a single bird — a difficult feat when a dozen or more take to the air at once. While not necessary, a good bird dog aids tremendously in finding bobwhites and adds to the enjoyment of the hunt. In fact, many quail hunters enjoy the dog work even more than the challenging shooting.

Quail require suitable habitat available to them year-round to thrive. Quality quail habitat consists of grassy/weedy areas for nesting, roosting, and raising broods; well-distributed patches of brushy cover for loafing and escaping predators; abundant food resources; and enough interspersed patches of bare ground to facilitate movement and foraging.

Above all, quail thrive where plant species and structural diversity is high and bare ground is moderate. Large blocks of land in the same type of cover — whether row crops, grass, or brush — is rarely good quail habitat. Management practices such as prescribed burning, disking, and light-to-moderate grazing can be used to produce and promote good quail habitat.



### Did you know?

.....  
Quail numbers across the state have increased in each of the past two years.



# ONGOING QUAIL RESEARCH

**The Department is in its third year of a five-year project in southwest Missouri to better understand bobwhite responses to different management techniques.**

Preliminary results suggest that covey break up and nest initiation occur earlier on large diverse grassland landscapes managed with prescribed fire and moderate grazing than on more traditionally managed areas consisting of block plantings of crops and nesting cover. Radio collars attached to male and female bobwhites have allowed researchers to locate nests and broods throughout the summer. Adult quail and their associated broods are consistently using moderately grazed habitat patches, and have almost totally avoided unburned and ungrazed portions of the study areas. In addition, early results suggest that nest success may be greater on large diverse grasslands managed with fire and grazing. Hunters who harvest a quail with an aluminum leg band or radio transmitter are asked to report it to the nearest Department office.

## 2016-17 FEATURED HUNTING SPOTS

Bobwhites can be found on many conservation areas across the state. While many of these areas provide quail hunting opportunity, several are designated as Quail Emphasis Areas (QEAs) and are managed with quail as a main focus. Managers' Notes from a sample of QEAs are also available starting on Page 26 of this report. Below are some suggested quail hunting opportunities. For more detailed information about an area, visit the Department's Places to Go webpage at [short.mdc.mo.gov/Z4V](http://short.mdc.mo.gov/Z4V).

**Bilby Ranch Lake CA** (Nodaway Co.)

**Bunch Hollow CA** (Carroll Co.)

**Bushwacker Lake CA** (Barton, Vernon Counties)

**Henry Sever Lake CA** (Knox Co.)

**Lake Paho CA** (Mercer Co.)

**Pony Express Lake CA** (DeKalb Co.)

**Robert E. Talbot CA** (Lawrence Co.)

**Sand Prairie CA** (Scott Co.)

**Schell-Osage CA** (Vernon, St. Clair Counties)

**Thomas Hill Reservoir CA** (Macon, Randolph Counties)

**Whetstone Creek CA** (Calloway Co.)

**White River Trace CA** (Dent Co.)



### Got Habitat?

Quail chicks require lots of insects, spiders and other invertebrates to support their rapid growth. Few bugs = few bobwhites.

Quail must have herbaceous cover consisting of some grass and lots of weeds to be successful. Ragweed, pigweed, lambsquarters, barnyardgrass, and smartweeds are a few of the often-maligned plants favored by quail.

For technical assistance in providing brood habitat and other quail needs, contact your local Private Land Conservationist or visit [mdc.mo.gov/contact-engage](http://mdc.mo.gov/contact-engage).

# FROG

## AMERICAN BULLFROG GREEN

### ABOUT FROGS

Bullfrogs and green frogs look similar but are easy to tell apart from other frogs in Missouri, due to their relatively large size at maturity. They prefer aquatic edge habitats that offer still, shallow water with aquatic and/or terrestrial vegetation. This provides both cover and food, such as insects and nearly any other small animal that will fit in their mouths. Ponds, lake and river banks, wetlands, and other vegetated waterways are all great places to find frogs. During or after a rain, frogs can be found anywhere as they attempt to locate new habitats.



American  
bullfrog



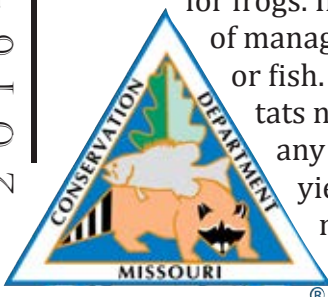
Green frog

### HUNTING AND MANAGEMENT

Pursuing frogs is very popular in Missouri, partly because hunters are permitted to hunt frogs with so many different methods. With a fishing permit, frogs may be taken by gig, trot-line, throw line, limb line, bank line, jug line, snagging, snaring, grabbing, or pole and line. With a hunting permit, frogs may be taken by crossbow, pellet gun, or .22 or smaller caliber rim-fire rifle or pistol, and with either permit may be taken by hand, hand net, bow or atlatl. Frogs may also be pursued during the day, or at night with an artificial light. During a full moon, frogs are typically more skittish because they feel more exposed, and are thus more difficult to approach. During a new moon, it is usually easier to get closer to them. Because frogs are amphibious and must keep their skin moist, they spend more time in the water and weeds during the day and are generally less visible around the banks than at night. Whether they're hiding or not, their location is often given away by their assertive croaks.

"Frogging" is a great way to introduce kids to hunting. Lethal weapons are not required, and froggers can catch and release if they want. Catching frogs by hand or hand net is exciting, since kids can get closer to frogs than to other small game species. Besides, most youngsters enjoy chasing a jumping, splashing, evasive frog around weeds and water.

Public and private landowners typically do not manage for frogs. Instead, frog populations are often the result of management for another species such as waterfowl or fish. Frogs are also common in aquatic edge habitats not subject to management or maintenance of any kind. Waters with few to no predators will yield the best frog populations, which is why newer ponds or very old ponds are generally plentiful with frogs.



#### VEGETATION THAT ATTRACTS FROGS

- • • • •
- Cattails
- Willows
- Millet
- Various types of aquatic vegetation
- Grasses at water's edge or overhanging a bank

# 2016-17 FEATURED HUNTING SPOTS

Bullfrogs and green frogs can be found along nearly all waterways on Department conservation areas but especially on wetland areas and along rivers and lakes.

Froggers may want to try the suggested areas listed below. For more detailed information about an area, visit the Department's Places to Go webpage at [short.mdc.mo.gov/Z4V](http://short.mdc.mo.gov/Z4V). Please contact the area before frogging, as some areas may experience seasonal waterfowl refuge closures.

**Atlanta CA** (Macon Co.)

**B.K. Leach CA** (Lincoln Co.)

**Bois D'Arc CA** (Greene Co.)

**Cooley Lake CA** (Clay Co.)

**Deer Ridge CA** (Lewis Co.)

**Fountain Grove CA** (Linn, Livingston Counties)

**Four Rivers CA** (Bates, Vernon Counties)

**Frost Island CA** (Clark Co.)

**Lamine CA** (Cooper, Morgan Counties)

**Long Branch Lake Management Lands** (Macon Co.)

**Otter Slough CA** (Butler, Stoddard Counties)

**Ralph and Martha Perry Memorial CA** (Johnson, Pettis Counties)

**Rebel's Cove CA** (Putnam, Schuyler Counties)

**Robert E. Talbot CA** (Lawrence Co.)

**Ted Shanks CA** (Pike Co.)

## DID YOU KNOW?

- Bullfrogs are ambush-style predators that will eat any live prey they can fit in their mouths, including insects, fish, mice, birds, and snakes!
- Frogs will often relocate during wet conditions to keep their skin moist while they're on the move. So make sure to recheck your frogging spots after it rains.





# RING-NECKED PHEASANT

## ABOUT PHEASANTS

Ring-necked pheasants were introduced to the United States from China in the 1880s and have become one of the nation's most popular game birds. Unlike many species not native to an area, pheasants have few negative impacts on native wildlife. Rather than displacing native species, pheasants have been able to thrive in agricultural areas where some native species, such as prairie chickens, have not. Early agricultural practices including the planting of small grain crops, large native grass hayfields, and weedy crop fields provided excellent nesting and brood-rearing habitat for the birds. Intensification of agriculture and the loss of Conservation Reserve Program, or CRP, acres throughout the Midwest have led to a decrease in pheasant habitat across its established range.



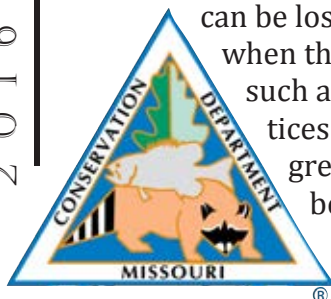
Ring-necked pheasant

## HUNTING AND MANAGEMENT

Pheasant hunting requires little equipment and is a great way to spend time outdoors with family and friends. Well-trained bird dogs are an asset for hunting large, grassy fields, but a few hunters walking side-by-side across a field can also produce and experience the explosive flush of a pheasant.

In an effort to bolster Missouri populations, wild pheasants from existing populations in Kansas, Nebraska, and South Dakota were released from 1987-2000. Some areas continue to hold steady populations of birds, some maintain few birds, and others never established successful populations. Pheasant harvest in Missouri peaked in 1990 with 24,479 hunters harvesting nearly 90,000 birds. In the 2014-2015 season, 5,370 hunters took just over 18,000 birds.

Landowners in Missouri's pheasant range can help populations by providing ample nesting and brood-rearing habitat. Pheasant hens typically nest in grassy fields. Native warm-season grass mixes and brome fields tend to provide good nesting opportunity, and as with bobwhite quail, quality brood-rearing habitat is essential for pheasant populations to flourish. Diverse patches of mixed grasses, weeds, and forbs attract hundreds of insect species that pheasant chicks eat to fuel their rapid growth. Alfalfa and clover fields provide good brooding habitat, but many nests and broods can be lost in these fields if hay cutting occurs prior to mid-July before chicks hatch or when they're too small to escape the mower. If you participate in Farm Bill programs such as the CRP or the Environmental Quality Incentive Program, inquire about practices such as CP-25 or CP-42. These promote plant and insect diversity and can greatly enhance habitat conditions for pheasants. Other management activities that benefit pheasants include shrub plantings, prescribed burning, and avoiding fall tillage of crop stubble. Pheasants are well adapted to agricultural landscapes, but it's critical to provide the habitat components they need.





## DON'T FORGET

Hunters may take pheasants statewide. This change was made last year because pheasants are already geographically limited in the state, and because harvest is restricted to male birds only, it does not impact the population.

## WHERE TO HUNT

Pheasants are most abundant in northwest Missouri and portions of northeast Missouri. Conservation areas with good populations of pheasants are few. For more detailed information on where to find pheasants, call the Department's Northwest or Northeast Regional Office (contact info can be found on the Table of Contents page of this publication).



### Did you know?

.....

Pheasants can dig through a foot or more of snow to get to food.

.....

Harvesting rooster (male) pheasants does not hurt the population because one rooster may mate with a dozen or more hens.

# SQUIRREL

## EASTERN GRAY FOX

Eastern gray squirrel

### ABOUT SQUIRRELS

In Missouri, hunters may pursue two species of tree squirrels — fox squirrels, called “red squirrels” by many, and eastern gray squirrels. Fox squirrels are the larger of the two species. They tend to be found near the edges of timber stands, in isolated woodlots and open woods without much understory, along timbered ridges and uplands, and even in hedgerows. Grays are more likely to occur in extensive tracts of forest and bottomlands, but it’s not unusual to find both species using the same area.



### HUNTING AND MANAGEMENT

Few game species are as widespread and underused across Missouri as squirrels. Squirrel hunting was very popular several decades ago with more than 218,000 hunters harvesting just over 3.1 million squirrels in 1972.

Today, however, it’s common to have the woods to yourself. In 2014, a few more than 65,000 hunters harvested just under 850,000 squirrels. Squirrel hunting is a great way to introduce youth to hunting. No specialized gear is needed, opportunities are frequent, and stealth and silence are not as critical as for deer or turkey hunting. Hunting squirrels is a great sport for seasoned hunters too. It hones observation skills and marksmanship, and it offers a chance to scout for other game such as deer or turkey. And, of course, a successful hunt results in some wonderful table fare.

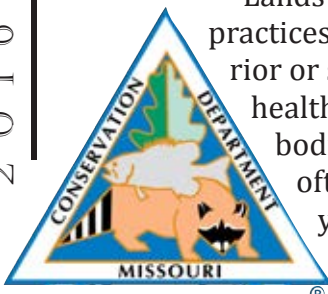
Gray squirrels are early risers and become active at sunrise, while fox squirrels tend to come out later in the morning and are active during mid-day. The activity of both species slows considerably in the mid-day hours on hot, humid summer days.

Hunters new to squirrel hunting should remember to move slowly through the woods, scanning the treetops for movement, and listening for the sounds of bushytails jumping from limb to limb or cutting and dropping nut hulls. Upon finding a lot of fresh cuttings on the ground, find a comfortable spot nearby and sit down awhile — you’ll usually have a shot or two shortly.

Lands are rarely managed specifically for squirrels, but some common management practices can be of benefit. Forest stand improvement (FSI) involves the removal of inferior or surplus trees to thin a stand and allow the remaining trees to experience better health and growth. An added bonus of FSI is that mast (acorns, nuts, or other fruiting bodies) production often increases, providing abundant food resources. Squirrels often nest in cavities and hollow trees, so some of these should be retained on your property. Squirrels will readily use nest boxes as well. Learn more in All About Squirrel Dens.



Fox squirrel





## WHAT DO SQUIRRELS EAT?

Missouri's squirrel season is long, running from late spring through late winter. Squirrel behavior and activity change throughout the year as they respond to differences in weather and food availability. For example, mid-day activity will often be different in winter than in summer, as squirrels forage or rest according to temperature. Likewise, a mulberry tree full of fruit could be a hotspot in June, but by October squirrels will be feeding on nuts and acorns. Be observant and adapt your hunting according to what the squirrels are doing or eating. Here are some common squirrel foods:

- **Spring:** buds, twigs, flowers, mushrooms, seeds of elms, maples, and oaks
- **Summer:** mulberries, hickory nuts, acorns, corn, walnuts, wild grapes, mushrooms, Osage orange fruit (hedgeapples)
- **Fall:** hickory nuts, pecans, acorns, walnuts, corn, Osage orange fruit (hedgeapples)
- **Winter:** nuts, acorns, bark, corn, buds

## 2016-17 FEATURED HUNTING SPOTS

Below are suggested areas that offer squirrel hunting opportunity. For more detailed information about an area, visit the Department's Places to Go webpage at [short.mdc.mo.gov/Z4V](http://short.mdc.mo.gov/Z4V).

**Bunch Hollow CA** (Carroll Co.)

**Coldwater CA** (Wayne Co.)

**Deer Ridge CA** (Lewis Co.)

**DuPont CA** (Pike Co.)

**Flag Spring CA** (Barry, McDonald Counties)

**Fort Crowder CA** (Newton Co.)

**Little Lost Creek CA** (Warren Co.)

**Long Ridge CA** (Franklin Co.)

**Rocky Creek CA** (Shannon Co.)

**Rudolf Bennitt CA** (Boone, Howard, Randolph Counties)

**Saline Valley CA** (Miller Co.)

**Sunklands CA** (Shannon Co.)

**Union Ridge CA** (Adair, Putnam, Sullivan Counties)

**Yellow Creek CA** (Chariton Co.)

## ALL ABOUT SQUIRREL DENS

- Gray and fox squirrels use both leaf nests and den cavities. Cavity nests are most often in the hollow trunk or large limb of a live tree, but squirrels will also use cavities in dead snags. Cavity nests are used more in the winter and during the spring reproductive period. These locations are warmer, more sheltered from weather and predators, and help keep the young protected. Leaf nests tend to receive more use in summer, perhaps because they're cooler than den nests. Hunters should not shoot into leaf nests, and should avoid shooting squirrels peeking out of cavities where they are unlikely to be recovered.



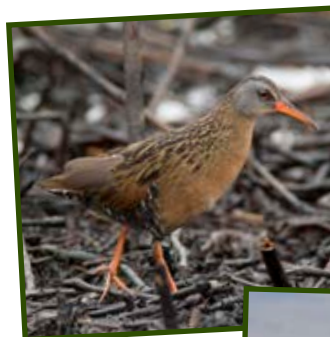
# RAILS AND SNIPE

## VIRGINIA RAIL SORA WILSON'S SNIPE

### ABOUT RAILS AND SNIPE

Several rail species migrate through Missouri every year, including yellow, Virginia, sora, black, and king rails. Virginia and sora rails are the only two species that may be harvested, and sora is the most abundant of these. Rails are predominantly marsh birds and can be seen and heard on many wetland conservation areas lurking in thick vegetation. Rails are omnivores and eat a wide variety of plants, insects, snails, and crayfish with their long bill made for probing in moist soils.

The Wilson's snipe is common in Missouri's wetlands and soggy areas. This marsh bird uses its long bill to probe for insects, worms, and larvae that burrow in damp soil.



Virginia rail



Sora



Wilson's snipe

### HUNTING AND MANAGEMENT

Rails and snipe are a challenge to hunt. When flushed, rails fly only a short distance and dive back into vegetative cover. Once back on the ground, the birds run quickly and are very hard to flush a second time. Snipe fly quicker and farther when flushed. During peak migration, sora rails are abundant and will react to loud sounds such as a car door slamming or single, loud hand claps. Sora rails have several calls including a descending "whinny," a "ker-wee" sound, and a call that sounds like "weep." Snipe calls are a repeated "chip." The call of the Virginia rail sounds like pig-like grunts, "kid-dik."

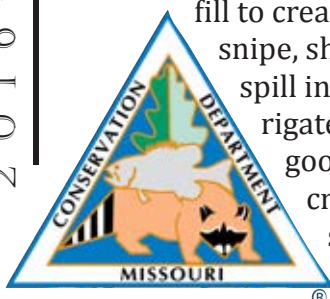
Being secretive, rails are found in dense moist soil vegetation in water varying from 0-28 inches. Research has shown that sora rails prefer water depth ranging from 2-6 inches in the fall, while Virginia rails prefer slightly shallower water less than 2 inches. Snipe tend to be found at the edges of pools where water and vegetation meet.

In most wetlands, areas of lower elevation in a pool never dry, unless the summer is extremely dry. These areas produce tall, thick wetland vegetation. In late August, water pumps at some managed wetland areas are turned on and wetland pools slowly

fill to create habitat for early migrants such as rail, snipe, shorebirds, and teal. Water is allowed to spill into the edges of these lower areas to irrigate native moist soil vegetation, which is a good food source for waterfowl. Muddy flats created by this management are great stopover habitat along the migration routes of shorebirds and snipe.

#### "I SORA SORA!"

A group of sora rails can collectively be known as an "ache," "expression," or "whinny" of soras.



# ONGOING MARSH-BIRD RESEARCH

Several research projects are being conducted on secretive marsh birds on conservation areas. Researchers are trying to determine the effects of different wetland management on marsh birds at different times of the year to better manage for their populations.

Studies include measuring birds' preferred water depth, vegetation type and density, plant height, and the amount of open water that these birds prefer in the spring and fall. A research project studying the effects of early-season flooding on fall migrating rails and snipe began in the fall of 2014 and is ongoing. On several areas, managers flood one pool in August, nearly two months earlier than a normal season. Researchers then monitor rail and waterfowl use of this early flooded pool, and compare the use to other pools that are flooded later in the season. Results are being compiled and will hopefully be available in the next few years.

Each year, marsh-bird surveys are also conducted on several Department areas. These surveys use a playback of recorded rail and bittern calls to attract a response from birds hiding in the vegetation to determine whether they are present in an area or not. Birds that are heard or seen are mapped and these birds' numbers are tracked each year.

## 2016-17 FEATURED HUNTING SPOTS

Rail and snipe hunting opportunities are very limited by weather, especially precipitation. Contact the area manager at the areas you are interested in hunting before making a trip to check on hunting conditions due to weather.

Below are suggested areas that offer rail and snipe hunting opportunity. For more detailed information about an area, visit the Department's Places to Go webpage at [short.mdc.mo.gov/Z4V](http://short.mdc.mo.gov/Z4V).

**B.K. Leach CA** (Lincoln Co.)

**Bob Brown CA** (Holt Co.)

**Coon Island CA** (Butler Co.)

**Eagle Bluffs CA** (Boone Co.)

**Grand Pass CA** (Saline Co.)

**Montrose CA** (Henry Co.)

**Nodaway Valley CA** (Holt, Andrew Counties)

**Settle's Ford CA** (Bates, Cass Counties)

**Ted Shanks CA** (Pike Co.)



It is easy to see why the sora is included in a group of birds coined "secretive marsh birds." These birds' impressive camouflage and relative silence keep them well-hidden in the thick vegetation of marshy habitats.

### DID YOU KNOW?

.....

The American coot is in the rail family. Unlike the other rails, the coot is duck-like, less secretive, and is hunted during waterfowl season.

.....

The oldest recorded rail species was a coot, and it lived 22 years 4 months!



# AMERICAN WOODCOCK

## ABOUT WOODCOCK

A migratory species, American woodcock visit Missouri in the fall and spring on their way to and from their wintering grounds in the southeastern states. The woodcock is unique among Missouri's game birds in that it is classified as a shorebird, but spends nearly all of its life in upland forests, forest edges, old fields and meadows. Look for woodcock during the fall hunting season in brushy thickets and bottomland timber during the day and in open fields where they roost at night.



American woodcock

## HUNTING AND MANAGEMENT

Woodcock are often overlooked as a game bird in Missouri, and most birds are harvested in pursuit of other game, such as bobwhite quail. Woodcock, however, provide excellent sport when specifically targeted because they readily hold for bird dogs, they can be abundant during the peak of migration, and they are often found on the Department's conservation areas. Woodcock are also fun to hunt because they are tricky fliers that can test even the best upland gunner.

Woodcock season in Missouri begins mid-October and the best hunting during that time is in the northern part of the state. As the birds move south through the state during fall migration, hunting improves. The first two weeks of November are the peak of bird numbers in south Missouri. Hunters should target brushy thickets in old fields, thickly wooded draws in agricultural landscapes, young timber cutovers, and bottomland timber. Savvy hunters will look for the half-dollar-sized white "splash" indicative of woodcock droppings to help narrow the search for occupied habitat.

The Department's public land managers provide quality hunting for American woodcock by creating and maintaining early to mid-successional habitat that is so critical for these birds. Management efforts such as prescribed burning, woodland restoration, and timber harvests are all used to create these types of habitat. Fortunately, this type of management is occurring on Department conservation areas across the state to benefit a variety of wildlife. Quality habitat coupled with lots of room to roam makes Missouri's public lands some of the best places to hunt woodcock in the state.



The woodcock's twittering wing beats at takeoff are unmistakable. You can listen to the wingbeats and the woodcock's "peent" call at [short.mdc.mo.gov/Z4H](http://short.mdc.mo.gov/Z4H).

# ONGOING WOODCOCK RESEARCH

Researchers at the University of Arkansas are currently studying which types of habitat American woodcock use along their spring migration routes. Department staff are helping in that effort by collecting data at woodcock singing grounds. This information will be used to better describe habitat used by woodcock and thus, help managers to better conserve those habitats. A second University of Arkansas research project involves tagging woodcock with satellite transmitters and monitoring migration timing and routes. This research will help identify areas where habitat management for woodcock is most needed.

## 2016-17 FEATURED HUNTING SPOTS

Conservation areas with suitable woodcock habitat can be found across the state. It is always a good idea to call the area manager or local wildlife biologist for tips on hunting locations and bird numbers in specific areas. The migratory nature of woodcock can mean that areas can fill up with birds seemingly overnight. On the other hand, strong cold fronts can also push birds out of an area just as fast.

Below are suggested areas that offer woodcock hunting opportunity. For more detailed information about an area, visit the Department's Places to Go webpage at [short.mdc.mo.gov/Z4V](http://short.mdc.mo.gov/Z4V).

**Bois D'Arc CA** (Greene Co.)

**Bull Shoals Management Lands** (Ozark, Taney Counties)

**Crowleys Ridge CA** (Stoddard Co.)

**Indian Hills CA** (Scotland Co.)

**Fort Crowder CA** (Newton Co.)

**Lamine River CA** (Cooper, Morgan Counties)

**Moniteau Creek CA** (Howard Co.)

**Taberville Prairie CA** (St. Clair Co.)

**Truman Reservoir Management Lands - Upper**

**Tebo Creek and Deepwater Creek** (Henry Co.)

**William R. Logan CA** (Lincoln Co.)



**Masters of disguise** - This female woodcock's plumage is perfectly camouflaged with the forest floor. Woodcock make a shallow nest on the ground in the leaf litter. Their eggs are also camouflaged to blend into its surroundings when the female is not at the nest.

### DID YOU KNOW?

A common name for the American woodcock is the "timberdoodle."

The primary food of the woodcock is the earthworm and its bill is designed to probe the soil to locate and grasp its prey.

On average, female woodcock weigh 30 grams more than males.

# RACCOON

## ABOUT RACCOONS

Raccoons are a medium-sized mammal with a noticeable black mask over the eyes and a ringed tail. Males and females look alike, although males are heavier. Raccoons can weigh between 6 and 25 pounds. They prefer timbered habitat near water. They are also common sights in urban and suburban areas. They make dens in hollow trees, caves, rocky crevices, and abandoned woodchuck burrows, among other places.

Raccoons are omnivorous, meaning that they eat both plant and animal foods including fruits, berries, grasses, corn, acorns, other nuts, as well as crayfish, clams, fish, snails, and a wide range of insects, frogs, snakes, bird eggs, mice, squirrels, and rabbits.



## HUNTING

The most popular method for raccoon hunting in Missouri is with dogs. Hunters release hounds at night to search for the scent of a raccoon. Once the dogs find the scent, they begin to bark and that lets hunters know they have found a scent trail and gives an indication of which direction the animal is headed. In most cases, the dogs are able to trail the raccoon to a tree where the animal is feeding. The dogs then begin a non-stop chorus of barking referred to by seasoned hunters as "treed," or the raccoon is up a tree. Once the dogs begin treeing, the search for the raccoon among the branches with the use of a flashlight begins. Occasionally, the tree is hollow and the raccoon finds refuge from the hunters. Other times, the raccoon tricks the dogs by leaving some scent on the tree and creates confusion, allowing for its getaway. Usually, the raccoon is located among the branches by its reflective eyes. A small caliber rifle is most popular to take raccoons after being treed with dogs. Although the basic method is described, there are many variations to this method which include daytime hunting and a wide range of types of dogs.

Another method of hunting raccoons that is growing in popularity is the use of electronic game calls. Since this is a daytime hunting method, only an electronic call and small caliber rifle are needed. Successful use of this method involves locating probable den sights such as hollow trees, large brush piles, or abandoned buildings. Once a suitable location has been found, the hunter places the electronic call so that the raccoons can hear the sound, but not easily locate its source.

Raccoon fighting sounds and the sounds that imitate young raccoons are effective during this time. The hunter hides in a location near the call where they can watch closely for animals approaching the call or coming out of the den locations.

Raccoon hunting success is usually greater on warm afternoons in late winter following an extended period of cold weather.

### DID YOU KNOW?

Raccoons have sharp non-retractable claws and long digits, making them excellent climbers.

Raccoons can rotate their back feet 180 degrees and climb down trees headfirst.





# MANAGEMENT

Raccoons need both denning and food-producing trees. Den trees may be dead or alive, but must contain secure areas for rearing young, and sleeping year-round. Many different trees and shrubs provide food for raccoons. Black cherry, serviceberry, wild plum, dogwood, and blackberry provide summer foods, while oak, hickory, and hazelnut provide food in the winter months. Having den and food trees with access to a stream or pond that has crayfish and frogs provides a diversity of habitat that raccoons can thrive in.

## 2016-17 FEATURED HUNTING SPOTS

Below are suggested areas that offer raccoon hunting opportunities. For more detailed information about an area, visit the Department's Places to Go webpage at [short.mdc.mo.gov/Z4V](http://short.mdc.mo.gov/Z4V).

**Angeline CA** (Shannon Co.)

**Daniel Boone CA** (Warren Co.)

**Deer Ridge CA** (Lewis Co.)

**Drury-Mincy CA** (Taney Co.)

**Fort Crowder CA** (Newton Co.)

**Frost Island CA** (Clark Co.)

**Henry Sever Lake CA** (Knox Co.)

**Huzzah CA** (Crawford Co.)

**Indian Hills CA** (Scotland Co.)

**Linscomb Wildlife Area** (St. Clair Co.)

**Long Branch Management Lands** (Macon Co.)

**Mussel Fork CA** (Linn, Macon Counties)

**Poosey CA** (Grundy, Livingston Counties)

**Ranacker CA** (Pike Co.)

**Rocky Creek CA** (Shannon Co.)

**Settle's Ford CA** (Bates, Cass Counties)

**Truman Reservoir Management Lands - Cross  
Timbers** (Hickory Co.)

**Whetstone Creek CA** (Callaway Co.)



A hunting dog "trees" a raccoon, or barks and keeps it up a tree until the hunters arrive.

# CROW AMERICAN FISH

## ABOUT CROWS

Missouri is home to two species of crow - the fish crow and the American crow. American crows are, by far, the more common of the two and are found statewide, while the fish crow's range is limited to areas along the Mississippi and Missouri Rivers and a sliver of southwest Missouri. It is difficult to tell the difference between the two species by sight, but their calls are very different and can easily be distinguished. Both species may be hunted in Missouri.

American crows are an adaptable species with a diverse diet that includes fruit, nuts, grain, acorns, insects, carrion, small mammals, eggs, reptiles, and nestling birds. In winter, crows tend to be associated with agricultural areas and wooded habitats along rivers and creeks. Crows are known for their mobbing behavior in which the presence of a potential predator (a hawk or owl) elicits a strong response. One crow's alarm can signal many others to join in chasing a potential predator to drive away the perceived threat.

While American crows are still relatively common in Missouri, most crow hunters agree that their numbers plummeted in the early 2000s when West Nile virus became established in the state, and populations still have not recovered to previous levels.



American crow

## HUNTING

Crows are considered one of the smartest birds in North America, so if you want a bird hunting challenge, this may be the sport for you! The 1940s, 50s, and 60s were the heyday of crow shooting, as it was a very popular sport during that time. Today, it's hard to find anyone who regularly goes afield after the "black bandits." Crows are considered a nuisance by many farmers, and because of this, access may be quickly granted to good crow hunting areas. Crow hunting can provide fast-paced action and many seasoned crow hunters describe it as addictive.

Because crows are so intelligent and have keen eyesight, it's imperative that hunters plan carefully and set up for success. Keep the number of hunters in your party to 2 or 3. More than this number makes it difficult to get everyone hidden and increases the likelihood of being spotted. Once you've chosen a spot to hunt, you should build a blind or find a good place to hide. It's important to make sure the blind has a dense back to avoid your movements being silhouetted and spotted by the crows. Use natural vegetation from the area you're hunting to blend the blind in with the surroundings. Try to set up with the sun at your back to optimize your vision and keep you in the shadows.

Many hunters use decoys placed on the ground in a field to simulate feeding, or hung from tree limbs to resembled perched birds. Some hunters use an owl decoy to stimulate a flock of crows to mob the owl, but others report good success without the owl. When crows are coming in, remain still until they are within shotgun range, then rise, swing, and fire in one smooth motion. If you move during their approach, it's likely that the crows will see you and veer away.



# HUNTING GEAR

The necessary crow-hunting gear to get started is minimal. You'll need a shotgun, plenty of shells, some camo, a call, and a stool.

- **Guns and Loads:** Most hunters use 12 or 20-gauge shotguns, but even a 28-gauge or a .410 can handle crows if shots are kept inside 30 yards. While many crow hunters use high brass loads, low brass target loads pack ample punch and are easier on the wallet and the shoulder. Remember that if you get into a good hunt, you may fire several boxes of shells. Shot sizes suitable for crows are #6, 7 ½, and 8.
- **Calls:** Crow calls fall into two main categories – mouth calls and electronic calls. Of course, mouth calls take time and practice to master but allow the caller to easily adjust the volume and calling sequence to react to the behavior of approaching birds. Many hunters enjoy the interactive nature and skill that a mouth call requires. Electronic calls use recordings of live crows to attract the attention of nearby birds. These calls often come with a remote control that can be used to adjust the volume and the particular call sequence being used.
- **Clothing:** Crows have excellent eyesight, so hunters should wear camouflage clothing that blends in to the area they'll be hunting. And don't forget to cover your hands and face with gloves and a mask – if not covered, glare from these features can alert crows to your presence.

## 2016-17 FEATURED HUNTING SPOTS

Crows are usually found on many conservation areas, but can move in flocks seasonally. Below is a list of selected areas that offer crow hunting opportunities. For more detailed information about an area, visit the Department's Places to Go webpage at [short.mdc.mo.gov/Z4V](http://short.mdc.mo.gov/Z4V).

**Douglas Branch CA** (Vernon Co.)

**Flatwoods CA** (Wayne Co.)

**Frost Island CA** (Clark Co.)

**Indian Hills CA** (Scotland Co.)

**Pigeon Hill CA** (Buchanan Co.)

**Platte Falls CA** (Platte Co.)

**Plowboy Bend CA** (Moniteau Co.)

**Rebel's Cove CA** (Putnam Co.)

**Stockton Lake Management Lands** (Cedar, Dade, Polk Counties)

### EATING CROW?

To most people, the words "eat crow" mean to admit you're wrong after taking a strong position on an issue. But some crow hunters take the phrase literally, using marinades, spices, and cooking techniques to provide good table fare. Not sure you want to eat a crow? Most folks who've tried it agree that it tastes a lot like dove or duck, so any recipes you enjoy for these species should work well for crow as well. Crow meat can be pretty tough, so using a marinade or tenderizer to help break down the muscle fibers will probably enhance your dining experience. For crow recipes, visit <http://www.crowbusters.com/recipes.html>.





# PREDATORS

COYOTE  
RED, GRAY FOX  
BOBCAT

## ABOUT PREDATORS

Coyotes, red fox, gray fox, and bobcats are furbearing mammals and can be hunted during prescribed seasons. Coyotes, foxes and bobcats are pursued for their valuable pelts, to alleviate depredation of domestic livestock, and for the sporting opportunity that they provide.

Coyotes are abundant and distributed throughout the state of Missouri. They prefer brushy areas, edges of timbered tracts, and open agricultural country found in the northern Missouri. Coyotes are active both day and night, but activity increases in low light conditions. Coyotes rely primarily on a diet of rabbits and small rodents but may also eat seasonally-available fruits and berries such as wild plums, persimmons, and blackberries, as well as grasshoppers, snakes, and birds. Coyotes are among Missouri's most adaptable species and have learned how to live in very close proximity to humans.

Red foxes occur statewide but are more abundant in northern Missouri. Habitat preferences and food habits are very similar to that of coyotes. Red foxes often live on the edges of small towns and within cities where they can escape one of their predators, coyotes.

Gray foxes occur throughout Missouri but are most abundant in Missouri's Ozarks and heavily forested areas in north Missouri. Food habits are also similar to that of coyotes and red foxes.

Bobcats occur statewide but prefer habitat that is thick and brushy. Second-growth timber stands with a lot of underbrush is perfect for bobcats. Food habits of bobcats are much like the canine predators but bobcats rely more heavily on sight for hunting than smell.

Coyote



Red fox



Gray fox



Bobcat

## HUNTING AND MANAGEMENT

While coyotes, foxes, and bobcats can be trapped, trapping requires much more gear to get started compared to hunting. When it comes to predator calling, most hunters already have most of the gear required to get started. Camo clothing that matches the terrain and protects you from the elements is important. Predator hunting can be done by the solo hunter or with a friend or family member. Shotguns or centerfire rifles in .22 caliber are preferred. A reliable electronic game caller with animal vocalizations seems to be the most popular call, but predators can be called in with mouth calls that imitate rabbits or rodents in distress. Extreme conditions in late winter keep prey species number reduced and the cold temps keep predators on the move – this time of year can make for an exciting hunt.

When a hunter turns on an electronic caller and a hungry predator is nearby, the resulting action can be pretty fast and intense. If no animals are seen within a



# HUNTING AND MANAGEMENT, CONTINUED

few minutes of calling, changing locations is necessary. Successful predator hunters will have a game plan that includes 10 or more sets, or locations, for each hunt. These sets are based on wind conditions, because predators will smell you and get spooked if you are upwind. If you are unsuccessful at the first set, move to the next one.

Keep habitat in mind when calling predators because they are likely going to be near habitat that their prey species prefer. People don't often manage land for coyotes, foxes or bobcats. High predator numbers are often the result of successful small game species management. Habitat suitable for rabbits, quail, deer, and turkey will also be attractive to many small rodents and, in turn, attractive to predators. Pelts of legally-taken furbearers can be sold by the taker during hunting or trapping seasons with the appropriate permit. The pelts can be tanned and displayed, or used for taxidermy.

## 2016-17 FEATURED HUNTING SPOTS

Below are suggested areas that offer predator hunting opportunities. For more detailed information about an area, visit the Department's Places to Go webpage at [short.mdc.mo.gov/Z4V](http://short.mdc.mo.gov/Z4V).

**Bilby Ranch Lake CA** (Nodaway Co.)

**Bonanza CA** (Caldwell Co.)

**Clear Creek CA** (Barton, Vernon Counties)

**Daniel Boone CA** (Warren Co.)

**Drury-Mincy CA** (Taney Co.)

**Frost Island CA** (Clark Co.)

**Graves Mountain CA** (Iron, Wayne Counties)

**Indian Hills CA** (Scotland Co.)

**Linscomb Wildlife Area** (St. Clair Co.)

**Settle's Ford CA** (Bates, Cass Counties)

**Ted Shanks CA** (Pike Co.)

**Truman Reservoir Management Lands - Cross**

**Timbers** (Hickory Co.)

**Union Ridge CA** (Adair, Putnam, Sullivan Counties)



### DID YOU KNOW?

It is rare, but coyotes can breed with domestic dogs. The resulting "coy-dog" usually more closely resembles the coyote, but domestic dog features are noticeable.

# BOWFISHING

## ABOUT BOWFISHING

Bowfishing doesn't refer to a species, and is not really fishing at all, but a hunt for fish. Although the word "fishing" is in the sport's name, bowfishing is more similar to small game hunting than to fishing, because it is the pursuit of fish with a bow and arrow. This is a legal method to pursue nongame fish, including bluegill, green sunfish, carp, carpsuckers, suckers, buffalo, drum, gar, and all other species not defined as game fish or listed as endangered in the Wildlife Code of Missouri. Bowfishing offers an exciting way to pursue these fish that typically draw little interest with traditional pole-and-line or setline methods.

A fishing license is needed to bowfish. Traditional fishing uses hooks, and fish aren't typically seen during the angler's pursuit of them. Bowfishing is quite different in that fish are first spotted and then shot at with a bow or crossbow. The bow or crossbow shoots arrows attached to a line so that the fish can be retrieved after they're pierced. Due to the water's refraction, connecting with a fish is harder than you might think. The deeper the fish is in the water, the more refracted it is by the water. The angler has to compensate for this refraction, making the shot more difficult. The tendency is to shoot over the fish, so learning how to adjust the shot at a moment's notice on a moving target can prove quite tricky.

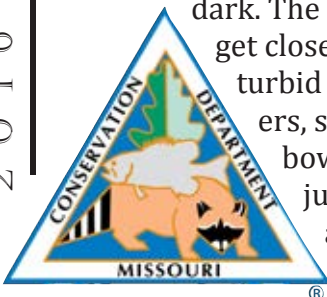


A bowfisherman shoots at a fish below the surface with an arrow attached to a line to retrieve the fish.

## HOW TO BOWFISH

Fish can be successfully pursued during the day, but many people bowfish at night when fish are often more active and more visible than in the daylight. Old-timers used small, wood-burning fires in baskets hanging over a boat's bow to illuminate the water at night. These were later replaced by oil lamps and lanterns. Today, halogen lights powered by a gas generator or LED lights are commonly used. Bowfishers without boats use handheld lights along the banks or other vantage point. Moonlight alone does not provide sufficient light for locating and properly identifying fish.

The moon phase and water clarity play an important role in bowfishing. During a full moon, fish are typically more skittish because they feel more exposed, and can be more difficult to get close to; during a new moon it is often easier to get closer to them as they feel more hidden in the dark. The same goes for water clarity – the clearer the water, the more difficult it can be to get close to fish even though you can see them better. The opposite is true of murky or turbid waters. Because fish are pursued by sight and most legal fish are bottom feeders, slowly cruising the shores and still backwaters are generally most productive for bowfishing. Fish will typically be seen feeding in the substrate, along the shore, or just loafing. Smooth, still water is most conducive for proper fish identification and shooting; choppy water makes it more difficult. During the day, the use of polarized sunglasses reduces glare on the water and enhances visibility.





# POINTERS

- Staying on the move and covering a lot of water is more successful than staying in one spot.
- If your mobility is restricted, try chumming the water with soured corn, canned corn, grain and molasses pellets, dog food, or cereal to encourage fish to come to you.
- Cautiously closing the distance is the key to getting a shot, but fish can appear and disappear from anywhere in the water at any time. The action can be quite unpredictable to say the least!

## BOWFISHING MANAGEMENT

Because nongame fish are pursued and harvested at significantly lower rates than game fish, their populations are typically abundant. The Department conducts some dedicated management for species like alligator gar, working to restore these fish to their former native habitat in southeastern Missouri in recent years.

Invasive species control helps to protect native fish species in Missouri waterways. These invasive species include silver carp, bighead carp, grass carp, and common carp, as well as goldfish. Regulations and other public awareness initiatives to prevent invasive species from inhabiting new waters are ongoing, and regulations permit unlimited harvest with few restrictions on these invasive species since their total eradication would be ideal.

## 2016-17 FEATURED BOWFISHING SPOTS

Many conservation areas don't support adequate nongame fish population or an area large enough to offer ample bowfishing opportunities and therefore don't permit bowfishing. Access to large lakes, reservoirs, and rivers provide the best opportunity and success for bowfishing. Try large waters by way of Department accesses, or consider one of these suggested areas. For more detailed information about an area, visit the Department's Places to Go webpage at [short.mdc.mo.gov/Z4V](http://short.mdc.mo.gov/Z4V).

### Conservation areas:

**Cooley Lake CA** (Clay Co.)

**Diana Bend CA** (Howard Co.)

**Duck Creek CA** (Bollinger, Stoddard, Wayne Counties)

**Eagle Bluffs CA** (Boone Co.)

**Four Rivers CA** (Bates, Vernon Counties)

**King Lake CA** (Gentry, DeKalb Counties)

**Little Compton Lake CA** (Carroll Co.)

**Long Branch Lake Management Lands** (Macon Co.)

**Marais Temps Clair CA** (St. Charles Co.)

**Pony Express Lake CA** (DeKalb Co.)

**Ted Shanks CA** (Pike Co.)

### Large lakes and reservoirs:

**Big Lake State Park** (Holt Co.)

**Lake Contrary** (Buchanan Co.)

**Mozingo Lake** (Nodaway Co.)

**Nodaway County Community Lake** (Nodaway Co.)

### DID YOU KNOW?

Shooting a fish with an arrow is not the same as catching it with a hook. Shot fish are considered harvested and must not be returned to the water. "Catch and release" bowfishing is simply not ethical. Rough fish are often overlooked for the food they provide. Some restaurants serve rough fish, and some grocery stores sell it as well.

# QEA MANAGER'S NOTES

*Area managers of a sample of the Department's Quail Emphasis Areas (QEAs) talk about the small game hunting outlook, weather, and management for small game on their areas. For conservation area (CA) maps and regulations by area, visit [short.mdc.mo.gov/Z4V](http://short.mdc.mo.gov/Z4V).*

**Blind Pony Lake CA** (Saline Co.; 660-335-4531) Based on 2015 fall covey counts, quail numbers dropped slightly from an average of 3 to 2.67 coveys per monitoring post since fall of 2014. With a mild winter in 2015 and relatively good weather this spring, a productive nesting season was anticipated. Throughout the area, approximately 300 acres of old field and grassland habitat was burned this winter and early spring to improve small game habitat, reduce thick native grass stands, and help control undesirable woody invasion. Ongoing management efforts such as edge-feathering, bull-hogging, and tree clipper work improve old field habitat for small game species. A variety of small game species have seemed to benefit greatly from these habitat management practices. Blind Pony Lake Conservation Area is restricted to archery-only methods for deer but is open to statewide regulations for small game hunting.

**Bonanza CA** (Caldwell Co.; 816-675-2205) Data collected during fall of 2015 showed a large increase in quail numbers across the area. Mild winter conditions and a relatively dry spring and summer should contribute to another good year of production for quail. Approximately 160 acres last fall and 240 acres in the spring of 2016 were burned to improve plant diversity and brood-rearing cover, and to set back undesirable woody invasion and cool-season grasses. Management activities during the summer and early fall will include invasive-species reduction and general maintenance on edge habitat. The area is open to statewide regulations for small game hunting. Bird hunters should scout the area early and often for whistling birds. The abundance of habitat allows quail to always be on the move.

**Bunch Hollow CA** (Carroll Co.; 660-646-6122) Based on covey counts conducted in the fall of 2015 and whistle surveys this spring, quail production was excellent during the summer with relatively good over-winter survival. With warm, dry weather in June, the nesting season was hopeful. Numerous spring burns were completed to improve habitat for small game and control undesirable woody cover. Management efforts are ongoing to reduce thick native grass stands, increase bare ground, and control woody invasion. This spring, over 38 acres of old fields were converted to native grassland. In late winter, old field habitat was renovated with tree removal, and the downed limbs were used to create small game escape cover.

Rabbit numbers continue to grow on the area as a result of management. Bird hunters should hunt slowly and quietly, focusing on areas with minimal grass cover, abundant early-successional vegetation, and shrubby cover. There will be about 48 acres of sunflowers managed for dove hunting this fall. The area is open to statewide regulations for small game hunting. All hunters are required to accurately fill out an area daily hunting tag located at all area parking lots and must return them to drop boxes located at area parking lots immediately after their hunting trip.



**Crowleys Ridge CA** (Stoddard Co.; 573-547-4537) Several heavy rainfall events during the month of May followed by a relatively dry June should result in average production this year for ground-nesting birds. Fall 2015 quail covey counts were slightly down from 2014 but still much higher than the 5-year average resulting in a fair quail population. Rabbit numbers should be average to above average this year. Habitat management continues on the area by providing early-successional habitat through prescribed fire and reduction of undesirable woody vegetation. Hunting quail and rabbit can be difficult due to abundant and dense cover on the area. It is essential to get off the trails and work cover slowly with dogs. Dove hunting should be fair due to below-average sunflower production in 2016. All small game hunters are required to complete and carry a daily hunting tag which is available at all area parking lots.



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**Emmett and Leah Seat Memorial CA** (Worth Co.; 660-726-3746) The winter of 2015-2016 was relatively mild, and spring 2016 quail whistle counts indicated good over-winter survival. Frequent rains in April and May likely disrupted some early nesting, but conditions appear good for July and August broods. Habitat management continues on the area to create more usable space for quail. Management is focused on reducing cover of undesirable woody vegetation and diversifying ground cover. Rabbits are abundant and pheasants may also be encountered on portions of the area. To have a successful quail hunt at Seat, it is essential to work the cover thoroughly with dogs. Quail hunters are required to complete and carry a daily hunting tag available at area parking lots.

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**Green Ridge Complex** (Johnson, Pettis Counties; 660-647-3520) This grassland complex was added as a QEA in 2015 and is composed of Unit 2 and 3 of the J.N. Kearn Memorial Wildlife Area, W.R. Kearn Memorial Wildlife Area, Bryson's Hope CA, the Bruns Tract, and Hartwell CA. Therefore, 2015 fall covey counts are the baseline for future monitoring efforts. Surveys are consistent with anecdotal observations over the past several years: spring observations saw slightly below-average whistling, but many adult pairs are being observed into mid-summer. Ongoing management activities include limited grazing during the growing season, disking to create brood-rearing habitat, invasive-species control, high-clipping grass plantings, and increasing bare ground. This complex is not typical quail habitat. It is dominated by blocks of cool season grasses and legumes or warm-season grasses and forbs interspersed with shrubby cover plots of bush indigo, blackberries, native plum, and grey dogwood. Hunters with dogs should find success on these areas.

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**Henry Sever Lake CA** (Knox Co.; 660-785-2420) Covey counts last fall have continued the trend of good quail densities on the area. Aside from a very cold snap in late April, the spring weather has been conducive for good nesting. A mild winter coupled with relatively dry weather and no downpours in June and early July set the stage for a good 2016 hatch. Management efforts are currently underway to reduce sericea lespedeza and reed canary grass. Fallow fields and edge-feathered areas should provide successful hunting opportunities for quail hunters. Rabbit and squirrel numbers look good and a sunflower field should provide good shooting opportunities for dove hunters.



**Lamine River CA** (Cooper, Morgan Counties; 660-530-5500) Mild winter weather should favor decent winter carryover for small game. Fall 2015 quail covey counts trended slightly upward from previous years. June 2016 whistle counts and incidental quail observations indicate quail numbers comparable to last year. Ongoing management continues to reduce fescue reinvasion and woody invasion. Woodland thinning and improving edge structure and habitat was completed on several tracts. The cool, wet mid-spring weather favored a flush of cool-season vegetation that may have created brood conditions that are thicker than desired. Early-planted sunflowers should offer good early dove hunting prospects, and late-planted sunflowers can offer decent mid- to late-season dove hunting with almost no hunting pressure. Squirrel hunters should find good hunting and relatively light hunting pressure. Hunting woodcock can be good because they receive little hunting pressure, and don't overlook these birds as a bonus during early quail season. Use a slow hunting style when hunting rabbit and quail. Large and variable cover types, combined with early fall hunter activities, seems to educate and influence quail behavior, making them a challenge to locate.

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**Maintz Wildlife Preserve** (Cape Girardeau Co.; 573-547-4537) The area experienced several heavy rain-fall events in May, but June was relatively dry, resulting in average production this year for ground-nesting birds. Fall 2015 quail covey counts were higher than 2014 and continue to rise, resulting in a good quail population on the area. Rabbit and squirrel numbers should be average this year. Habitat management continues to focus on providing early-successional habitat through prescribed fire and by reducing undesirable woody vegetation cover. Hunting quail and rabbit can be difficult due to abundant and dense cover on the area. Dove hunting will be similar to the past few years and should be average to above-average. All small-game hunters are required to complete and carry a daily hunting tag available at all area parking lots.

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**Poosey CA** (Grundy, Livingston Counties; 660-646-6122) Based on fall 2015 covey counts, quail production was good last summer. Hunting pressure was heavy, especially in the opening week during November, but hunters still located coveys in January. Late-summer and fall burns continue to be implemented to reduce thick native-grass stands, increase bare ground, and control fescue. An additional 18,000 feet of edge-feathering was completed, bringing the total amount of enhanced edge habitat to over six miles on the area. Bird hunters should focus on areas with minimal grass cover, abundant early-successional vegetation, and shrubby cover.

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**Shawnee Trail CA** (Barton Co.; 417-842-3588) Based on fall 2015 covey counts and early summer 2016 whistle surveys, quail production was fair during the summer of 2015. The number of coveys present was still strong, but the number of birds per covey was down somewhat from the previous year. April and May were very wet, but it seemed that just as nesting began, the weather cleared up and became ideal for nest success. The ongoing quail study has already indicated early nesting and brood-rearing cover was abundant heading into the summer. Many prescribed burns were conducted across the area as well as a massive tree removal project during fall and winter 2015-2016. Current management to improve the quality of habitat for all



small game include spot spraying for invasive and undesirable plants, shrub plantings, and utilization of patch-burn-grazing in two units on the area that comprise over 300 acres. Quail and rabbit hunters should focus on areas that are closer to the area's interior, since hunting pressure near easy area access points tends to move the game in that direction. Dove hunting prospects look great for 2016 as the wheat fields are in excellent shape and should provide migrating birds a lot of food and cover to slow them down and provide great hunting. A youth dove-hunting clinic will be held on August 31 with a hunt on September 3. Youth must be 11-15 years old, hunter-education certified, and accompanied by an adult. To attend, call the office number listed for the area to register by August 26.



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**Stockton Lake CA** (Cedar, Dade, Polk Counties; 417-326-5189) The Big Sac Arm of Stockton Lake is managed as a QEA. Fall 2015 covey counts yielded a 10% decrease in quail coveys heard from the fall of 2014. However, 2015 surveys were slightly above the 10-year average. A fortunate mild winter with little snow should have led to good overwinter survival and there was favorable nesting weather this spring and early summer. Other small game on Stockton Lake includes rabbit, woodcock, and squirrel, and all three are underutilized on Stockton. Hunters with beagles would experience a good hunt with Stockton's abundant rabbit population. The area harbors a considerable population of woodcock during the peak migration with many shrubby fields ideal for foraging. The first two weeks of November are typically the best woodcock migration weeks, but it can differ a week on either end depending on the year. Though much of Stockton's timber is poor quality, there are pockets of good oak-hickory timber where both gray and fox squirrels are abundant in the fall and winter. Many of the poorer stands of timber harbor squirrels in the summer months also, foraging on other food sources. A few major habitat improvements have occurred over the past year. Several old fields that had become completely forested were ground up with a bulldog in an effort to return the fields back to a mix of herbaceous and shrubby plants for quail and rabbits.

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**Thomas Hill Reservoir CA** (Macon, Randolph Counties; 660-385-4920) Fall 2015 covey counts showed an increase for the second year in a row. The 2015-16 winter was a mild one in north-central Missouri, so overwinter survival should have been high and brought a good crop of birds into the 2016 breeding and nesting season. Weather patterns around the area during nesting season were favorable, so it is hopeful that another good hatch occurred. Management efforts continue to focus on the creation of quality brood-rearing habitat and escape cover, and the reduction of overly thick stands of native grass. Hunters continue to report that when birds are flushed they frequently fly in to the thick woody cover and can be hard to flush again. Highway T crosses the lake in the middle of the area and is still closed due to construction but this project may be complete later this fall. Plan your trip accordingly or contact area staff at the number listed above to check if the bridge has reopened.

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**Whetstone Creek CA** (Callaway Co.; 573-254-3330) Based on fall quail counts conducted in 2015 and observations this spring, overwinter survival appears good. Several fall burns were completed along with

bullhog work to set back woody succession and control undesirable cover like autumn olive. Area staff continue to reduce thick native grass stands, increase bare ground, and control sericea lespedeza and fescue. Rabbit and grassland birds also seem to have benefited from management efforts as higher numbers have been observed in recent years. Bird hunters should hunt slowly and quietly, focusing on areas with minimal grass cover, abundant early-successional vegetation, and shrubby cover. Later in the season, focus on forested areas. A dove-hunting clinic for youth and adults will be hosted on September 2-3; to attend, call the office number above to register by August 26. Quail hunters must carry a daily hunting tag found at the north and south ends of the area, and the quail season closes on December 15th. The area is open to statewide regulations for all other small game hunting.

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# SMALL GAME GRAB BAG

Tips, Tricks, and Information for Small Game Hunters

## HOW TO SKIN AND PREPARE RABBIT

Cottontail rabbit can be excellent table fare, but first it must be prepared properly for cooking. There are multiple ways to skin a rabbit. Many demonstrations exist online by searching the phrase “skinning a rabbit.” Most methods involve removing the skin before removing the entrails. This keeps your hands free of blood and hair, thus a cleaner finished product.

Start by cutting through the skin around each hind leg, just above the “knee” joint. Next, cut through the skin from one hind foot to the other, staying on the inside of the legs, connecting the circular cuts made previously. Next run your fingers under the skin, creating a “loop” on the back just in front of the tail. While holding both hind feet with one hand, grab the loop of skin just created and pull downward until you have separated the skin from the carcass approximately half way down the rabbit’s back. From the belly side of the rabbit, grab the skin and pull downward. Continue this process until you have removed the skin all the way down to the rabbit’s front legs, just past the shoulder. Use your fingers to separate the skin from the rabbit’s leg at the “elbow” joint, creating another loop of skin. Insert the index finger of one hand through the loop of skin while grabbing the already-skinned shoulder of the rabbit with the other hand. Pull in opposite directions until the front leg is completely separated from the skin. Repeat the process with the other front leg. Continue pulling the skin downward until you have reached the base of the rabbit’s head. With a sharp knife, separate the rabbit’s head, with skin attached, from the rest of the carcass. Remove the front and hind feet using a sharp knife. You are now ready to gut the rabbit.

Make an incision just below the rabbit’s sternum, being careful not to puncture any internal organs. Cut downward from the sternum through the rabbit’s pelvis, taking caution not to cut the intestines. Reach into the rabbit’s body cavity, grabbing just above the heart, and pull downward until all of the entrails are removed. Rinse the carcass thoroughly.

You are now ready to prepare the rab-





bit for cooking. Separate the front and hind quarters from the carcass at the “shoulder” and “hip” joints, respectively. Season and cook according to one of the many tasty rabbit recipes that can be found at [short.mdc.mo.gov/Z4j](https://short.mdc.mo.gov/Z4j).

## KEEP GAME SEPARATE OR IDENTIFIABLE

Dove hunting is popular with many hunters because of its social aspect. It provides a good opportunity for hunters to go afield with their friends or take their kids or other family members out for an afternoon of fast-paced action. Often, dove hunters sit side-by-side in the same patch of cover. While this allows for some fine fellowship, it is important that hunters keep their harvest separate or identifiable. When hunting with other people, keep your harvested birds separate from one another’s, or mark your birds if they’re placed in a common pile so that they’re identifiable as yours. Regulations require that each hunter keep his or her birds separate or identifiable from those shot by others. Following this rule helps our Conservation Agents clearly determine who shot how many birds and helps them protect our wildlife resources.



*Thank you for your interest,  
and happy hunting!*